

REMARKS

The rejection of claims 1-6 under 35 U.S.C. § 102(b) has been obviated by revising claim 1 to more clearly distinguish the invention for the prior art record. However, before the specific language of the amendment as discussed, a brief recap of the principal features and advantages of the invention will be made so that the language used in the amendment may be more fully appreciated.

Generally speaking, the invention is an improved, folding-type mirror device for a vehicle that is better able to resist vibration from wind currents caused by the movement of the vehicle. Such mirror devices typically include a support shaft, and a case (which typically contains an electric motor and gear) that is rotatably mounted onto the support shaft via a support portion. In the past, the support portions have generally been fabricated as a tubular structure which is rotatably movable about the support shaft. However, the relatively thin walls forming the tubular structure of the support portion renders it susceptible to the aforementioned undesirable vibration caused by wind currents that result when the vehicle moves. While it may be possible to solve this problem by simply making the support portion thicker in the radial direction, the applicant has observed that such thickening can create problems such as shrinkage in the plastic forming the support portion and consequent warping of the mirror. Accordingly, in the invention, the tubular structure of the support portion is reinforced by means of a plurality of reinforcing ribs which integrally connect the tubular support portion with a bottom portion of the case. The provision of such a plurality of reinforcing ribs advantageously reinforces the support portion without the need for thickened walls, thereby making it more resistant to undesirable vibration.

Claim 1 has been revised to more specifically recite the structural features of the invention which lead to the aforementioned advantages. Claim 1 now recites a folding-type mirror device for a vehicle that comprises a support shaft including a base portion, a case installed on the support shaft, the case including a support portion disposed around an outer periphery of the base portion of the support shaft, the case further having "a bottom portion spaced apart from the support portion," and

a plurality of reinforcing ribs integrally connecting an outer surface of the support portion with the bottom portion; . . . .

None of the references either discloses or suggests the folding-type mirror device recited in amended claim 1. Specifically, there is no disclosure or suggestion in the Mori '499 patent of a bottom portion that is "spaced apart" from a support portion, and of a "plurality of reinforcing ribs" integrally connecting an outer surface of the support portion with the "spaced-apart bottom portion." Instead, the bore 3d that the Examiner attempts to equate to the recited "support portion" and surrounding bars 3c appear to be integrally connected to the structure that the Examiner equates to the "base portion" in Figure 1. Hence, there is no rib connecting a support portion to a spaced-apart base portion. Moreover, the Mori '944 patent discloses only a single rib 3e; by contrast, amended claim 1 now recites "a plurality of reinforcing ribs." For all these reasons, amended claim 1 is clearly patentable over the Mori '944 patent.

Amended claim 1 is further patentable over the Sakata '050 patent. Here, the Examiner attempts to equate the spaces between the arcuate openings in rotary member 52 in Figure 3 to the "rib" or "ribs" recited in amended claim 1. However, again, there is no disclosure or suggestion in either Figures 3 or 4 of a support portion of a case that is disposed around an "outer periphery of [a] base portion of the support shaft," in combination with a bottom portion of the case that is "spaced apart" from the support portion, much less of a plurality of reinforcing ribs "integrally connecting an outer surface of the support portion with the [spaced apart] bottom portion; . . . ." For all these reasons, amended claim 1 is clearly patentable over the Sakata '050 patent.

Claims 2, 3, 4, 5 and 6 are each patentable at least by reasons of their dependency upon amended claim 1. New claim 21 is patentable not only by reasons of its dependency upon claim 1, but for its recitation that the reinforcing ribs radial extend from the support portion "a distance substantially greater than thickness of said annular wall [of said support member] . . . ."

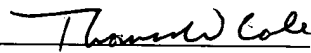
New claim 22 is patentable not only by reason of its dependency upon amended claim 1, but for its recitation that the case includes a case wall opposite from the support portion, and "at least one of said reinforcing ribs is integrally connected to said wall . . . ."

New claim 23 is patentable not only by reason of its dependency upon claim 1, but for its recitation that the ribs are spaced “substantially uniformly around said support portion.”

Finally, new claim 24 is patentable not only by reason of its dependency upon claim 1, but for its recitation that the support portion and the base portion are substantially annular and concentric with respect to one another, and the radial extent of the base portion is larger than the radial extent of the support portion, and “wherein said reinforcing ribs radially extend from said support portion to said base portion . . . .”

Now that all the claims are believed to be allowable, the prompt issuance of a Notice of Allowance is hereby earnestly solicited.

Respectfully submitted,

  
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